

## **IBM Data Science- The Battle of Neighborhoods (Week 2)**

Chinese Restaurant Exploration

# Problem Statement

A budding entrepreneur sees a trend in New York City for Chinese cuisine. He is interested in setting up shop in New York City. Being in the big city, he is unsure of where the best place would be for him to open up his new chinese restaurant. However, he understands the power of data in order to make a more informed decision. Therefore, utilising data, he would like to determine where the best place to open up a new chinese restaurant would be.

# Data

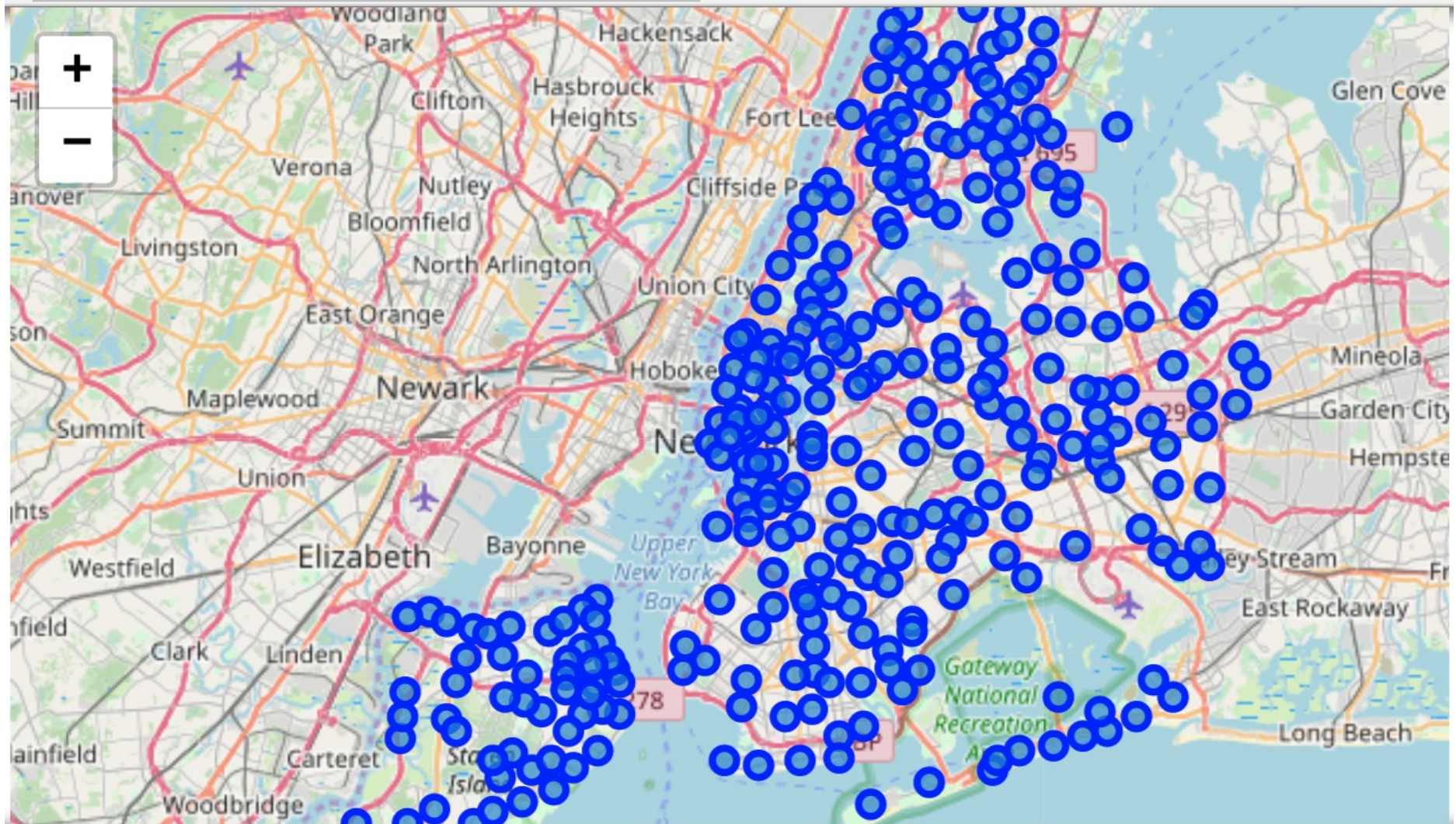
In order to help this restaurateur solve his dilemma, data from the New York City neighbourhoods database will be used. Then, based on this dataset and the given latitude and longitudes of the neighbourhoods, the Foursquare API will be queried in order to find out the distribution of Chinese restaurants in each neighbourhood. Then, based on the neighbourhood with the lowest density of Chinese restaurants available, it could be used to determine whether or not the new restaurateur should set up shop there.

# Methodology

First, the dataset is downloaded and converted to a pandas dataframe.

Next, some exploratory data analysis is performed on the imported dataset.

# Map of New York City



# Methodology

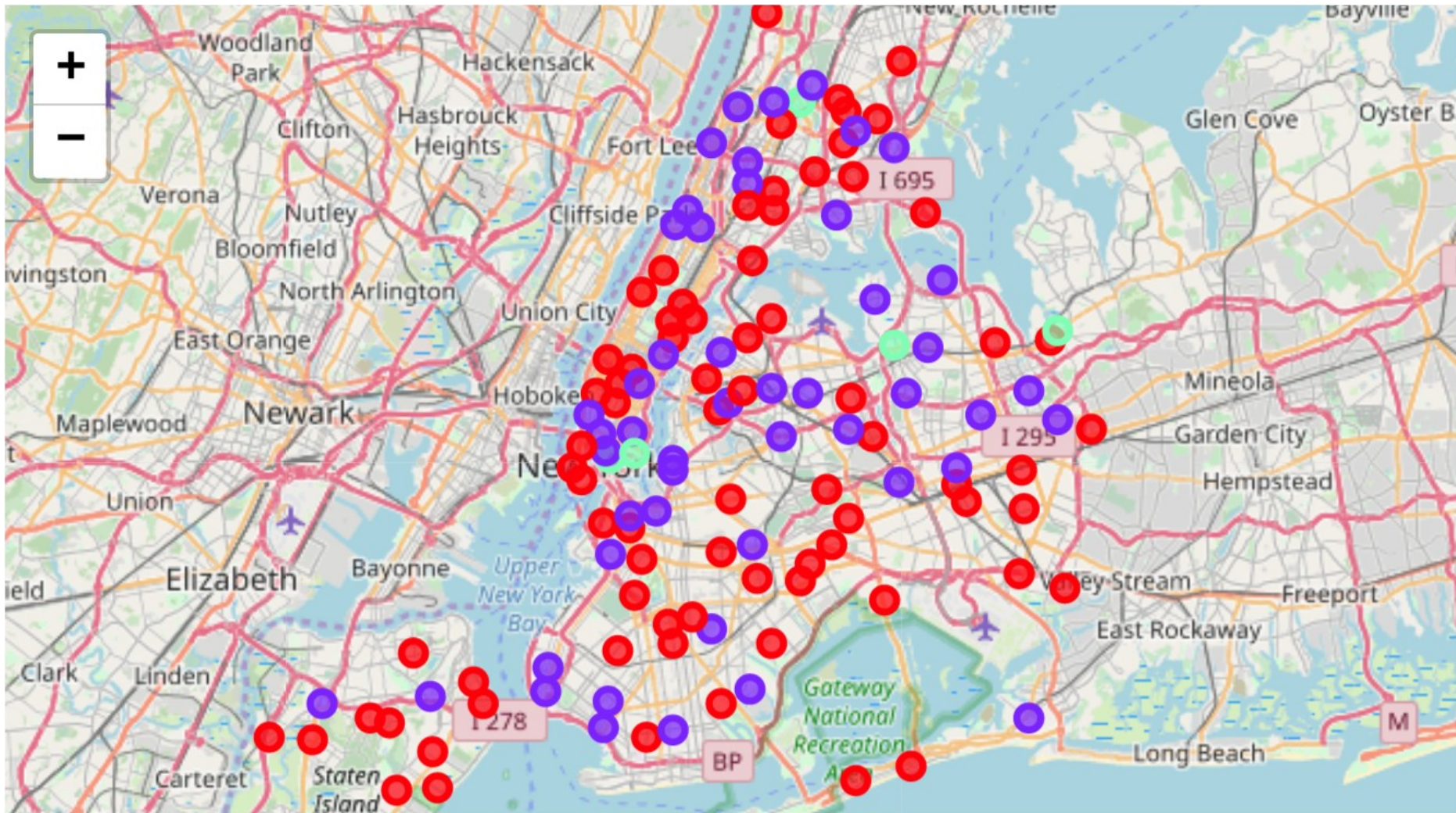
Then, the number of venues of each neighborhood is obtained, and the Chinese Restaurant venues are filtered out. Then, the sum of Chinese restaurants for each area is calculated.

After that, clustering is performed to determine the areas with the lowest amount of Chinese restaurants. The clustering is split into 3 clusters with Kmeans clustering.

Once the clusters are obtained, the clusters are plotted on the neighborhoods.



# Map of NYC Clustered



# Results & Discussion

From the analysis conducted, it can be observed that cluster 1 contains the areas with the lowest count of Chinese Restaurants. Overall, it can be observed that New York City still has a lot of opportunity for new Chinese Restaurants. Other than Manhattan, Queens, and the Bronx area, the number of Chinese Restaurants is still relatively low. One of the boroughs with the lowest amount of Chinese Restaurants would be the Staten Island area.



# Conclusion

In conclusion, analysis was done on the New York City Neighborhoods dataset, and a suitable new location to open up a Chinese restaurant was determined.